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## THE MORE IMPORTANT RECORDS FOR MARCH

Throughout the upper Great Plains region grasshopper eggs are still in good condition and but very little winter mortality has been reported. In the more southern States of Oklahoma, Texas, Utah, and Arizona, and in southern California as high as 10 percent of the eggs have already hatched.

Mormon crickets started hatching in mid-January in Nevada. By the end of February they were hatching in parts of Montana, and in March we received reports of hatching from Wyoming, Utah, and Washington.

May beetles were observed at lights in Mississippi and Louisiana during the latter half of March. It is estimated that 400,000 acres of wheat have been destroyed by white grubs in south-central Kansas. Heavy damage is also reported in parts of Oklahoma.

The army cutworm is becoming numerous in parts of Kansas and Oklahoma.

Heavy flights of armyworm moths were observed late in March in Virginia, Indiana, Missouri, and Oklahoma.

Observations late in March indicate that the chinch bug has passed the winter very successfully in Illinois, Iowa, and Oklahoma. In the latter State rather heavy flights were observed on March 25 during a period of high temperature.

A local outbreak of green bug was observed near Stillwater, Okla., and in the southwestern part of the State. This insect was reported as doing considerable damage in northwestern Texas.

Light infestations of hessian fly are recorded from Missouri and Kansas.

Corn ear worm eggs were found in central Texas during the third week in March. This insect is also recorded as having passed the winter successfully on Long Island, N. Y., and in Utah.

The pea aphid was reported as present in alfalfa during the last week in March in Virginia, Louisiana, Oklahoma, Texas, and Washington.

Overwintering larvae of codling moth were beginning to pupate in Georgia and Delaware during the third week in March. This insect seems to have passed the winter successfully over most of the country.

The first pupa of oriental fruit moth was observed in Georgia on March 19. In Delaware, 28 percent of the larvae had transformed by March 23.

Plum curculio adults began to appear in the Fort Valley section of Georgia on March 4 and in marauding numbers by the middle of the month. They were beginning to appear in numbers by March 23 in Albemarle County, Va.

Green citrus aphid was numerous in central Florida during the first week in March. By the middle of the month, however, the infestation had subsided, apparently owing to large populations of the Chinese ladybeetle (Leis dimidiatus F.).

The vegetable weevil was abundant enough in tobacco plant beds in Georgia and Florida to necessitate control measures. Rather severe damage to turnips is reported from Mississippi and Louisiana. The weevil was also reported damaging cover crops in southern California.

During the third week in March a very heavy infestation by harlequin bug was observed on cabbage and mustard in the Chadbourn district of North Carolina. The first individuals of these insects were observed in the Norfolk district of Virginia during the fourth week in the month. This insect is also reported as quite numerous throughout southeastern Oklahoma.

Rather heavy infestations of tobacco flea beetles were reported from Tennessee during the third week in March. The insect was reported from South Carolina and Virginia, but little damage has been done.

Very large numbers of male cankerworm moths have been observed in Illinois, Iowa, Missouri, and Nebraska. Heavy stripping of foliage of apple trees is reported from Oklahoma and this insect is also recorded as emerging in Ohio, Pennsylvania, and New Jersey.

The outbreak of Epinotia meritana Heinr., first recorded last year in the Powell National Forest, Utah, appears to be as heavy, if not heavier, than it was last year.

A very heavy infestation of sandflies in the vicinity of Savannah, Ga., was reported this year. It is said to be the most serious outbreak in the last 5 years.

During the third week in March several specimens of dog ticks were collected from different localities on Marthas Vineyard Island in Massachusetts.

Cattle grubs are reported as being more abundant than during the last 3 years in Iowa. Dropping of the grubs is somewhat earlier than usual in Georgia and Missouri.

Buffalo gnats are causing some trouble in parts of Mississippi, although the situation is not as serious as in 1933.

G E N E R A L F E E D E R S

GRASSHOPPERS (Acrididae)

Iowa. H. E. Jaques (March 21): Grasshopper eggs seem to be unusually abundant throughout much of the State, particularly in the southern and western parts.

North Dakota. F. Gray Butcher (March 23): Observations indicate that eggs have overwintered with no noticeable injury. Many reports of overwintering nymphs from various sections.

Missouri. L. Haseman (March 24): Recent egg check-ups indicate relatively little winter mortality. We are expecting a very heavy hatch.

Arkansas. R. L. Shotwell (March 28): Melanoplus differentialis Thos. is the dominant species of grasshopper in the northeastern part of Arkansas. The eggs are in good condition and hatching is expected to begin about April 20.

Kansas. H. R. Bryson (March 29): Grasshopper eggs are abundant in practically every section of the State. Observations indicate that they have overwintered in perfect condition. Eggs dug out of the soil at Manhattan on March 21 and kept in the laboratory hatched in a few days. Third- and fourth-instar nymphs of Chortophaga spp. were plentiful in Riley County about the middle of the month.

Oklahoma. H. T. Rainwater (March 23): Farmers attending organization meetings for grasshopper control at Ardmore, in Carter County, and other places reported occurrence of newly hatched grasshoppers on March 23. This was confirmed in some places by survey observations.

C. F. Stiles (March 25): Recent examinations of eggs in scattered communities throughout the northeastern and central parts of the State show that they are in good condition. A few eggs brought into the office and kept at warm temperatures have already hatched. A small number of hoppers of the noninjurious species have also been reported.

B. A. Bieberdorf (March 26): Grasshopper eggs were reported as hatching in a few isolated places during the week of March 13-19.

Texas. R. R. Reppert (March 26): In a few limited and favorably exposed areas in Navarro County, northeastern Texas, 100 newly hatched nymphs per square foot were found. (March 28): A survey of Montgomery and Walker Counties, in southeastern Texas, today indicated hatching practically completed, with from 5 to 10 nymphs per square foot.



Montana. H. B. Mills (March 21): Numerous reports of overwintering nymphs of *C. viridifasciata* Deg. from eastern Montana.

Utah. G. F. Knowlton (March): Reports of grasshoppers hatching in northern and central Utah were made on March 10, 14, 19, and 22. Grasshopper nymphs (probably Haldeman's locust (*Pardalophora haldemani* Scudd.)) were moderately abundant in rye stubble west of Eureka, in the central part of the State, on March 11.

Arizona. J. R. Parker (March 29): Not more than 10 percent of the grasshopper eggs in Maricopa and Yuma Counties are hatched. Baiting in these counties before April 20 appears to be unnecessary.

California. J. R. Parker (March 29): Not more than 10 percent of the eggs in the Imperial Valley are hatched. No hatching north of this valley.

MORMON CRICKET (*Anabrus simplex* Hald.)

Montana. H. B. Mills (February 26): Mormon crickets began hatching in the lower Yellowstone Valley on February 26.

Wyoming. Margaret Greenwall (March 24): C. L. Corkins reported that Mormon crickets were hatching generally in southern exposures over most of Sheridan County, on the northern border near the central part of the State, during the entire week beginning March 7.

Utah. C. J. Sorenson (March): These crickets were found hatching in the western part of the State in Tooele County on March 11 and in Millard County on March 15.

Nevada. G. G. Schweis (March 22): The Forest Service has reported having observed a hatching of Mormon cricket eggs the middle of January.

Washington. R. Nelson (March 20): The first of the Mormon cricket in Franklin County has appeared 4 miles north of Pasco.

MAY BEETLES (*Phyllophaga* spp.)

Mississippi. C. Lyle (March 24): F. A. Smith reports that May beetles were abundant at lights on the streets of McComb the night of March 15. A correspondent at Picayune, in Pearl River County, reports under date of March 21 that May beetles were so numerous in that vicinity as to defoliate rose bushes and oak and pecan trees.

E. W. Dunnan (March): One beetle was taken on a window screen near a light in Leland on March 21 and two were taken at the same place on March 22.

Louisiana. B. A. Osterberger (March 19): The first flight of June bugs was noted on March 19. The most numerous species was P. congrua Lec. The night was very warm and sultry, the temperature being 73° and the humidity 92.

Kansas. H. R. Bryson (March 29): White grubs have been numerous in gardens. The adults are just beneath the surface of the soil, ready to fly when the soil temperature rises.

#### CUTWORMS (Noctuidae)

Virginia. A. M. Woodside (March 23): Climbing cutworms were fairly common on peach trees in low spots at Crozet, Albemarle County.

H. G. Walker and L. D. Anderson (March 25): Cutworm eggs were observed on a spinach leaf at Norfolk on March 10.

Kansas. H. R. Bryson (March 29): The army cutworm (Chorizagrotis auxiliaris Grote) has about returned to normal numbers after a scarcity of a few years. They are most numerous in grass plots, but may be found in alfalfa fields. Slight injury to seedling beets and spinach was observed at Manhattan on March 27.

J. R. Horton (March 25): Worms of C. auxiliaris, half grown or more, were in evidence on winter wheat near Wichita, southeast of the central part of the State, but were not numerous.

H. H. Walkden (March 25): Larvae of the army cutworm are abundant in pastures in Riley, Clay, and Cloud Counties, northeast of the central part of the State. This is in marked contrast with 1937, when the larvae of this species were very scarce. Larvae of the dingy cutworm (Feltia subgothica Haw.) are abundant in pastures near Manhattan, Riley County. Small larvae of the clay-backed cutworm (F. gladiaria Morr.) are common in areas where little barley is the dominant grass.

Oklahoma. F. A. Fenton (March 28): The army cutworm has been found in wheat in several widely distributed places in the State, particularly in Tillman and Kiowa Counties.

Arizona. C. D. Lebert (March 25): On March 23 some damage by cutworms was noticed on melons south of Phoenix area. Adults of F. annexa Treit. were taken in a citrus field on February 4.

#### BUTTERFLIES AND MOTHS (Lepidoptera)

Pennsylvania. H. E. Hodgkiss (March 24): At State College on March 22 a specimen of the mourning-cloak butterfly (Hamadryas antiopa (L.)) was taken and on March 19 one specimen of the scallop shell moth (Calocalpe undulata L.) was collected.

Virginia. H. G. Walker and L. D. Anderson (March 25): A luna moth (Tropaea luna L.) was collected on March 23 near Norfolk.

Tennessee. G. M. Bentley (March): The tiger swallowtail (Papilio glaucus turnus L.) is emerging. One adult was brought to this office on the 19th and one on the 21st.

Georgia. T. L. Bissell (March 10): Butterflies of the alfalfa caterpillar (Eurymus eurytheme Bdv.) are on the wing at Experiment.

Florida. J. R. Watson (March 23): Woolly bears are out in force in some sections, feeding mostly on Rumex acetosella and other plants and occasionally doing much damage to melons and young corn.

Missouri. L. Haseman (March 24): Along with male cankerworm moths and an occasional armyworm and cutworm moth at Columbia, a number of different species of moths came to lighted windows and street lights during the last few nights. They appear to be noctuids, but there are also a number of other undetermined species included.

Colorado. C. R. Jones (March 26): Mourning-cloak butterflies are emerging regularly. Specimens of the adults of Autographa californica (Speyer) have been taken.

#### CRANE FLIES (Tipulidae)

Georgia. T. L. Bissell (March 10): "Perrywinkles," or larvae of a species of crane fly, are abundant in streams at Experiment. They are used for fish bait.

Mississippi. E. W. Dunnam (March 25): Many large crane flies are present in the vicinity of Leland. A few have been observed since March 10.

#### COMMON RED SPIDER (Tetranychus telarius L.)

Mississippi. C. Lyle (March 24): H. Gladney reports under date of March 22 that he has observed considerable injury to azaleas, camellias, and arborvitae in Jackson County. Cape-jasmine leaves showing injury by these mites were received from Issaquena County on March 23, and a correspondent at Biloxi, in Harrison County, sent camellia leaves damaged by them to this office on March 21.

E. W. Dunnam (March 24): The red spider was found damaging cotton plants in a greenhouse at Stoneville.



Louisiana. B. A. Osterberger (March 19): These spiders have been very numerous on flowering sweet peas and have caused a yellowing of the leaves.

Missouri and Kansas. H. Baker (March 23): There has been but little mortality of hibernating red spiders on apple trees, therefore greater numbers of healthy specimens can be found on apple trees in northeastern Kansas and northwestern Missouri than ever before at this season of the year under this writer's observation.

## CEREAL AND FORAGE - CROP INSECTS

### WHEAT AND OTHER SMALL GRAINS

#### ARMYWORM (Cirphis unipuncta Haw.)

Virginia. H. G. Walker and L. D. Anderson (March 25): Rather large numbers of armyworm moths were observed flying around lights on the evenings of March 23 and 24 in Princess Anne County.

Indiana. P. Luginbill (March 23): For several days armyworm moths have been noticed flying about La Fayette and vicinity. They were first noticed on March 20 and 21. Hundreds of them were observed feeding on pussy willow on the University grounds. For the last several days we have had strong southerly winds and possibly they have been blown up from the south. The temperature has also been favorable for flights. On March 22 it was 77° F.

Missouri. L. Haseman (March 24): The early season flight of moths has begun around Columbus, although they haven't been abundant. The moths do not seem to be worn by long flight, therefore it is possible that they are emerging here.

Oklahoma. F. A. Fenton (March 28): C. unipuncta has been found in wheat in several widely distributed places, in Tillman and Kiowa Counties, particularly.

#### CHINCH BUG (Blissus leucopterus Say)

Illinois. W. P. Flint (March 22): Examinations made during the last month continue to show a very high percentage of survival for the winter.

Iowa. C. J. Drake (March 25): The chinch bug survey now in progress shows that the winter mortality during 1937-38 has been considerably lower than during the last 4 or 5 years. Threatening populations of overwintering bugs occur in most of the counties in the southern third of the State. The infestation is apparently more spotted in the eastern half of the State.

H. E. Jaques (March 21): In the southeastern part of the State chinch bugs are fairly abundant.

Oklahoma. R. G. Dahms (March 26): There was a rather heavy flight of chinch bugs from winter quarters to small grains on March 25, when the temperature reached 82° F. Only a very few bugs had migrated prior to that date, although the temperature reached 85° on March 20 and 21. (Reported from the State Field Station at Lawton, Comanche County; southwestern Okla.)

GREEN BUG (Toxoptera graminum Rond.)

Oklahoma. C. F. Stiles (March 25): A local outbreak of this pest was observed 10 miles southeast of Stillwater, in Payne County. The spots range in area from a few square feet to 20. Some winged forms were observed. Ladybeetle larvae are very numerous and under favorable conditions should check the outbreak.

R. G. Dahms (March 26): The green bug has done considerable damage in a few wheatfields in the southwestern part of the State.

Texas. F. L. Thomas (March 21): Green bugs were reported as doing considerable damage to wheat in Hale, Floyd, and Fisher Counties in northwestern Texas, on March 18.

HESSIAN FLY (Phytophaga destructor Say)

Missouri. E. T. Jones (March): Survey of select fields in five southwestern counties revealed infestation in 33 percent of the fields examined. Infestations ranged from 8 to 18 percent, with low intensity. Greatest infestation was found in Greene County, where 86 percent of overwintering larvae had pupated on March 16.

Kansas. J. R. Horton (March 10): An unusually mild winter started development of the hessian fly during the first half of February, as indicated by a little pupation and emergence. Examinations up to February 18, when interrupted by snow and colder weather, showed about 1.5 percent living pupae and about 1.5 percent emergence. On February 18-19 snow fell, covering the ground to a depth of 9 inches and finally disappearing on February 27. No damage was done to the fly, unless to the negligible percentage that had passed beyond the larval stage.

E. T. Jones (March): Survey of the infestation of select fields in 10 southeastern Kansas counties was made on March 12-16. Light infestations, ranging from 2 to 20 percent, with low puparia intensity, were found in 50 percent of the fields. Highest infestations were

found in Geary County where, on March 18, larvae were found to have wintered in good condition. On March 18, 66 percent had pupated, about 2 weeks earlier than usual. Although it is possible for a second spring brood to build up a strong infestation, only light, spotted infestations are indicated at this time.

WHEAT WHITE GRUB (Phyllophaga lanceolata Say)

Kansas. H. R. Bryson (March 29): P. lanceolata has been destructive in a number of counties in the State. The population apparently has been building up during the last few years. The area of damage has gradually extended northward. The northernmost limit of injury occurred at Glasco, Cloud County, on March 25. E. G. Kelly estimates that approximately 400,000 acres of wheat has been devastated. Most of this injury has been on land that has been cropped continuously to wheat for 4 or 5 years. The area most affected lies in the south-central part of the State, the maximum amount of injury being in Harper County.

Oklahoma. R. G. Dahms (March 26): This pest is very abundant in some wheatfields. In a heavily infested field in Comanche County, in southwestern Oklahoma, an average of 25 grubs per square yard were found. The weather has been so favorable for wheat growth that very little wheat has been killed by the grubs in the last 2 or 3 weeks.

G. A. Bieberdorf (March 26): In the wheat-growing sections the wheat white grub has been doing considerable damage during the past winter. The heaviest damage appears to be in Grant, Alfalfa, and Kay Counties, on the northern border in the central part of the State.

F. A. Fenton (March 28): The recent favorable weather for wheat growth has stopped the damage by P. lanceolata, inasmuch as the wheat plants have now developed root systems large enough to withstand considerable injury.

Arizona. E. E. Russell (March 28): Since March 17, with mean temperature at 57.2° F., Say's stinkbug (Chlorochroa sayi Stal ) has occurred in greater numbers than common on mature wild mustard (Sisymbrium irio) which has been permitted to grow as a cover crop among young citrus in the Citrus Belt east of Mesa. When first observed these bugs were uniformly dark olive green in color, indicating that they had recently emerged from winter quarters. Egg development in the ovaries of the females when first observed was scant, but at present are nearly fully developed. Little, if any, oviposition has occurred in the field. Considerable gregariousness has been observed, particularly on the sunny side of clumps of heavy mustard with south and east exposure, where from 15 to 30 bugs have frequently been collected by striking the opposite side of the mustard clump over a standard sweeping bag. An average of 0.146 bug per sweep has been taken by



ordinary sweeping methods. A total of 959 adults have been examined showing 55 percent of the total number collected were females. The tachinid parasite Gymnosoma fuliginosa Desv. is present in reasonably small numbers.

#### MITES (Acarina)

Texas. F. L. Thomas (March 21): An unknown mite, larger than the red spider, caused local damage to oats in Hood, Bosque, and Denton Counties the latter part of January and in February. Investigations showed that the infestation occurred only on land where oats had been planted continuously for several years.

#### CORN

##### CORN EAR WORM (Heliothis obsoleta F.)

New York. L. A. Carruth (March 22): Conditions on Long Island seem favorable for the survival of the corn ear worm pupae. The natural mortality of the pupae during the winter months is probably between 95 and 99 percent, but the survival of even a few individuals is sufficient to insure serious infestations during the following season. During the spring of 1937 live pupae were found on Long Island and reared to adults. From present indications, this situation will apparently be repeated during the spring of 1938.

Texas. F. L. Thomas (March 21): Eggs have been found in alfalfa in Falls County, central Texas, although no emergence of adults has yet occurred in Brazos County. Very strong evidence has been obtained this year indicating that the moths spread rapidly over considerable distances.

Utah. H. E. Dorst (March 14): A recovery of approximately 65 percent of the pupae has been obtained this spring from overwintering cages that successfully transferred from larvae last fall. A recovery of approximately 50 percent of the pupae were obtained in unplowed corn-fields.

##### SOUTHWESTERN CORN BORER (Diatraea grandiosella Dyar)

Texas. F. L. Thomas (March 21): This insect was found to have extended its range east to Wilbarger County and southeast to Taylor County, according to the survey last fall. It has been distributed throughout the Panhandle for several years.

#### ALFALFA

##### ALFALFA WEEVIL (Hypera postica Gyll.)

Utah. G. F. Knowlton (March 14): An adult weevil was observed to be active in an alfalfa field at Riverside, in northern Utah.



California. A. E. Michelbacher (March 22): The average number of alfalfa weevil larvae collected per 100 sweeps of an insect net for different fields in the San Joaquin Valley on March 14 ranged from 6 to 442, in the San Francisco Bay area on March 21 ranged from 2 to 198, while on the same date the range at Pleaston was from 1 to 27. Parasitization of large alfalfa weevil larvae by Bathyplectes curculionis Thos. in the different fields in the San Joaquin Valley on February 24 ranged from less than 1 percent to 2 percent, but since that time has increased considerably. Parasitization in the San Francisco Bay area on March 8 was 88 percent.

PEA APHID (Illinoia pisi Kltb.)

Virginia. H. G. Walker and L. D. Anderson (March 25): Pea aphids are becoming rather abundant in alfalfa fields at Norfolk and a few winged forms have been collected in pea fields.

Louisiana. C. O. Eddy (March): These aphids have been common throughout the State during the month of March.

Oklahoma. R. G. Dahms (March 26): The pea aphid is abundant in many fields of alfalfa in southwestern Oklahoma.

Texas. F. L. Thomas (March 21): Plant lice are reported to be causing severe damage to alfalfa in Collingsworth County, in northwestern Texas.

Washington. R. D. Eichmann (March 4): Green alfalfa at Walla Walla, barely over 1 inch tall, yields as many as four aphids per sweep of an insect net. More than a third of these are immature forms, several of which have wing pads. Many aphids were found on bottom-land alfalfa last fall. Aphids gave birth to young at Pullman all winter.

PLANT BUGS (Hemiptera)

Utah. G. F. Knowlton (March 14): In northern Utah in alfalfa fields and on roadside weeds Lygus elisus hesperus Knight is active and adults of Agallia sanguinolenta Prov. are abundant.

THREE-CORNERED ALFALFA HOPPER (Stictocephala festina Say)

Louisiana. L. O. Ellisor (March): Nymphs are beginning to hatch at Baton Rouge.

CLOVER

CLOVER LEAF WEEVIL (Hypera punctata F.)

Illinois. W. P. Flint (March 22): This weevil is appearing in much more than normal numbers in the clover fields in the central part of the

State. Apparently the mild winters of 1936-37 and 1937-38 are responsible for the very high survival. It is already ragging clover and alfalfa in many fields.

California. A. E. Michelbacher (March 22): Most of the larvae collected on March 8 in the San Joaquin Valley were dead. It appeared that a fungus disease was causing this mortality.

#### SUGARCANE

##### SUGARCANE BORER (Diatraea saccharalis F.)

Louisiana. B. A. Osterberger (March 17): A few borers have been found in the pupal state. No eggs have been found.

E. K. Bynum, W. E. Haley, and L. J. Charpentier (March): The examination of cane trash on top of the soil in overwintering experiments in the southern part of the sugar section revealed that 13 percent of the larvae had pupated by March 2 and by March 15 the percentage had increased to 50. The first pupa was found on February 9. On March 21, 4 egg clusters, with an average of 26 fertile eggs per cluster, were found at Houma in 1 man-hour.

##### SUGARCANE BEETLE (Euethola rugiceps Lec.)

Louisiana. B. A. Osterberger (March 17): This beetle was noticed doing considerable injury to stubble cane around the Bayou Teche section, St. Mary Parish. Skunks have done much in the control by digging out the adults for food. Adults are being collected at lights.

J. W. Ingram (March 10): Injury to sugarcane appeared in the vicinity of Franklin early in March. On 1 plantation 1,230 beetles were collected at 3 500-watt trap lights on March 10. Warmer temperatures than usual for late February and early March have caused the beetles to become active earlier than usual.

#### F R U I T I N S E C T S

##### SAN JOSE SCALE (Aspidiotus perniciosus Comst.)

Georgia. T. L. Bissell (March 23): A correspondent at Hawkinsville reports that he finds almost no San Jose scale.

Mississippi. C. Lyle (March 24): Jack Milton, at Jackson, and N. L. Douglass, at Grenada, report that the San Jose scale is causing severe damage to unsprayed fruit trees in their districts.

Colorado. C. R. Jones (March 26): Numerous requests have come to this office for control of this pest.

TARNISHED PLANT BUG (Lygus pratensis L.)

Missouri. L. Haseman (March 24): This bug is on wing, visiting fruit buds and blossoms literally by the millions throughout central Missouri.

APPLE

CODLING MOTH (Carpocapsa pomonella L.)

New York. D. W. Hamilton (March 26): Notwithstanding the lower temperatures this year in Poughkeepsie, Dutchess County (-22° F., as compared to 40° in previous years), larval mortality under bands appears to be low. Snow covered the ground over longer periods than in the winter of 1936-37, which may have caused more larvae to be destroyed by birds. While the percentage of infested fruit was somewhat lower in this region in 1937 than it was in 1936, it should be remembered that the crop was unusually large. At this time it is estimated that the overwintering larvae per tree in most orchards is about the same as it was last spring.

Delaware. L. A. Stearns (March 23): The season is unusually early and the apples are well advanced. Early varieties are in full delayed dormant stage. Pupation of overwintered larvae is 1 percent. In 1937 transformation did not begin until between April 16 and 26.

Georgia. C. H. Alden (March 24): Overwintering larvae are beginning to pupate at Cornelia. About 25 percent of the larvae are dead and appear to have been killed by a fungus.

Wisconsin. C. L. Fluke (March 31): The mortality of overwintering larvae was low and practically none was found dead in orchards in Crawford County. More larvae went into winter quarters than have been observed for several years, indicating a large first brood of moths in western Wisconsin.

Missouri and Kansas. H. Baker (March 23): Recent observations in orchards in northeastern Kansas and northwestern Missouri indicate that larvae came through the mild, open winter with a minimum of mortality and that they are unusually abundant. Several growers have noted the fact that birds were relatively scarce in orchards during the winter.

Kansas. H. R. Bryson (March 29): Larvae of the codling moth were reported by R. L. Parker to be abundant during the winter in Doniphan County. Mortality is low.

EASTERN TENT CATERPILLAR (Malacosoma americana F.)

New York. J. A. Evans (March): Egg masses of the apple tree tent caterpillar brought into a warm room on March 29 started hatching that day.

Pennsylvania. H. E. Hodgkiss (March 24): Eggs were not as abundant as they have been the last 3 years, as observed in a survey on March 14 to 16.

Virginia. M. P. Jones (March 31): The eastern tent caterpillar is feeding on wild cherry near Fort Myer, Arlington County.

North Carolina. W. A. Thomas (March 6): The eggs began hatching at Chadbourn the first of March, before any foliage had developed on wild cherry. The tents are much more abundant this season than last.

Georgia. O. I. Snapp (March 24): The first larvae of the eastern tent caterpillar were observed on February 25 in a peach tree near Fort Valley, central Georgia. These larvae were from  $\frac{1}{4}$  inch to  $\frac{1}{2}$  inch long on that date. The infestation to March 24 is not greater than that of an average year.

T. L. Bissell (March 17): Tent caterpillars are just starting their webs in wild cherry at Experiment. (March 23): A correspondent reports an unusually large number of tent caterpillar webs in the fruit trees at Hawkinsville.

Florida. A. H. Madden (March 14): A considerable number of full-grown larvae were noted on March 11 and 12 at Quincy, Gadsden County. Very little damage was observed, however.

Mississippi. J. G. Hester (March 24): A number of colonies of this insect on wild cherry in the vicinity of State College has been observed during the last few weeks.

Arkansas. W. J. Baerg (March 10): Hatching has just begun and a few caterpillars have emerged from about half of the egg masses. The species will be common but not very abundant, as judged by the number of egg masses.

APPLE APHIDS (Aphididae)

Connecticut. P. Garman (March 23): Eggs of Anuraphis roseus Baker and Aphis pomi Deg. are much more abundant than they were last year, and occur in large numbers in many orchards throughout the State. Few have hatched.

New York. J. A. Evans (March): Grain aphids (Rhopalosiphum prunifoliae Fitch) were observed for the first time in the college orchard at Ithaca on March 29. Last year they did not make their appearance until April 26.



Pennsylvania. H. E. Hodgkiss (March 24): Aphid eggs were not abundant in Luzerne, Columbia, and Lycoming Counties on March 14 to 16. On March 15 green aphids (A. pomi) began to hatch in Adams County and on March 23 were becoming abundant.

New Jersey. M. D. Leonard (March 27): A few stem mothers of the apple grain aphid (R. prunifoliae) are just beginning to hatch at Ridgewood.

Virginia. A. M. Woodside (March 21): The rosy apple aphid (A. roseus) began hatching in the vicinity of Staunton on March 18 or 19. They are not abundant but there may be enough in some orchards to cause damage. Eggs of the apple grain aphid began hatching on March 16 or earlier.

Mississippi. C. Lyle (March 24): F. A. Smith reports that there was a medium infestation of Eriosoma lanigerum (Hausm.) on apple trees in Tate County on March 19 and D. W. Grimes observed this species on apple at Sallis, in Attala County, on February 25.

Missouri. L. Haseman (March 24): The eggs of the apple plant lice are beginning to hatch throughout central Missouri. The species does not show evidence of being very abundant.

#### APPLE LEAFHOPPERS (Cicadellidae)

Iowa. H. E. Jaques (March 21): The apple tree leafhopper is showing up rather abundantly in flight on warm nights.

Missouri. L. Haseman (March 24): Apple leafhoppers seem to have wintered perfectly throughout central Missouri.

#### EUROPEAN RED MITE (Paratetranychus pilosus C. & F.)

Connecticut. P. Garman (March 23): This mite is more abundant than it was last year.

Pennsylvania. H. E. Hodgkiss (March 24): On March 14 to 16 red spider eggs were not abundant in Luzerne, Columbia, and Lycoming Counties.

#### PEACH

#### ORIENTAL FRUIT MOTH (Grapholitha molesta Busck)

Delaware. L. A. Stearns (March 23): The season is unusually early and the peaches are in full bloom in southern Delaware. Pupation of overwintered larvae is 28 percent, as compared with 3 percent on this date in 1937.

Georgia. C. H. Alden (March 19): The first pupa of the overwintered larvae was found on this date at Cornelia.

PLUM CURCULIO (Conotrachelus nenuphar Hbst.)

Virginia. A. M. Woodside (March 23): Plum curculios are fairly common along the edges of peach orchards in the Crozet section of Albemarle County. This is the earliest record of their entering the orchard in that section.

Georgia. C. H. Alden (March 21): The first hibernating beetles were caught today by jarring peach trees at Cornelia. Last year the first beetles were caught on April 13. This season is about 3 weeks ahead of 1937.

T. L. Bissell (March 22): A peach grower at Hampton reports a large number of these pests jarred from peach trees on March 21, but none has been found at Experiment. (March 26): Curculios are coming from hibernation in large numbers and growers have been spraying for more than a week in Spalding and Lamar Counties. The emergence is heavier than expected, considering the very light crop of peaches last year.

O. I. Snapp (March 22): Adults began to appear from hibernation on March 4 at Fort Valley, about 4 days after full bloom. They were appearing in numbers on March 15, when three-fourths of the petals had dropped, and they had reached the center of the orchards in numbers by March 22. An average of 3.6 beetles per tree were caught in one orchard on March 15, but the general infestation is not believed to be heavier than that of an average year. Eggs were forming in the bodies of some of the females caught on March 10 and there were mature eggs in the bodies of all females caught on March 15. (March 28): Larvae one-fourth grown were found in Elberta peaches today. Infestation about normal.

PEAR

PEAR PSYLLA (Psyllia pyricola Foerst.)

New York. J. A. Evans (March): A number of pear psylla eggs had been laid by March 29.

Connecticut. E. P. Felt (March 24): Oviposition by the pear psylla has started.

PLUM

RUSTY PLUM APHID (Hysteroneura setariae Thos.)

Mississippi. C. Lyle (March 24): Plum twigs heavily infested were received from Tupelo, in Lee County, on March 19. It is reported that plum trees in Aberdeen are heavily infested with lice that probably belong to this species.

THISTLE APHID (Anuraphis cardui L.)

Idaho. R. W. Haegle (March 2): The thistle aphid was found hatching on prune in southwestern Idaho early in March and most of the eggs hatched in the warmer districts on this date. The infestation seems general and indications are that control measures will be necessary to prevent severe damage. The situation is similar to previous ones when heavy infestations of this aphid on prunes have been observed in springs following unusually mild winters. The winter was one of the mildest on record.

GRAPE

GRAPE LEAFHOPPER (Erythroneura comes Say)

Missouri. L. Haseman (March 24): Grape leafhoppers seen to have wintered perfectly throughout central Missouri and in leafy and grassy harbors they are now present in swarms.

Arizona. C. D. Lebert (March 25): Adults were numerous on trumpet vines on a ranch west of Phoenix on March 10.

WALNUT

WALNUT CATERPILLAR (Datana integerrima G. & R.)

Missouri. L. Haseman (March 23): In recent diggings in the vicinity of walnut trees that were completely stripped last fall little evidence of overwintering pupae have been seen, indicating that in spite of the terrible infestation last fall we will not have an unusually heavy winter carry-over.

CITRUS

GREEN CITRUS APHID (Aphis spiraeicola Patch)

Florida. H. Spencer (March 24): These aphids were numerous on orange and grapefruit trees around Haines City, in Polk County, central Florida, the first week in March. The outbreak was subsiding on March 15, when the Orlando district and the Okeechobee groves near Port Mayaca were becoming infested. In general over the State the infestation is rather spotted and less intense than in 1937. Around Orlando the Chinese ladybeetle (Leis dimidiatus F.) is appearing in larger numbers than in previous years and is the most important controlling factor. It was observed feeding also at floral nectaries of avocado trees.

COWPEA APHID (Aphis medicaginis Koch)

Arizona. C. D. Lebert (March 25): Several infestations of the burclover or cowpea aphid were observed on the terminal growth of citrus in the Phoenix area.

CITRUS WHITEFLY (Dialeurodes citri Ashm.)

Mississippi. C. Lyle (March 24): Cape-jasmine leaves infested with this pest have been received from correspondents in Holmes and Lowndes Counties recently. H. Gladney reports having observed several heavy infestations on citrus in Jackson and Harrison Counties during the last few weeks, and Jack Milton states that these insects are abundant on Cape-jasmine in Hinds County.

Louisiana. C. O. Eddy (March 20): Whitefly was reported on the wing last week for the first time.

CITRUS RUST MITE (Phyllocoptes oleivorus Ashm.)

Florida. J. R. Watson (March 23): This mite is very numerous and much spraying is being done.

Louisiana. C. O. Eddy (March): Rust mites are reported common on citrus south of New Orleans.

CITRUS RED MITE (Paratetranychus citri McG.)

Florida. J. R. Watson (March 23): Purple mites appeared in the groves generally in March, considerably earlier than usual. The infestation is heavy over most of the State. Much spraying is being done.

California. H. J. Ryan (March 25): The citrus red mite declined somewhat in Los Angeles County in February, but there were still a good many citrus orchards at the end of the month with infestations heavy enough to warrant control measures.

SIX-SPOTTED MITE (Tetranychus sexmaculatus Riley)

Florida. H. Spencer (March 24): This mite is appearing in grapefruit groves in several citrus-growing sections. Affected leaves show the characteristic yellow spots.

PINEAPPLE

PINEAPPLE MEALYBUG (Pseudococcus brevipes Ckll.)

Florida. H. Spencer (March 24): Golden Abachi pineapple plants, which have been in the ground 3 years, were found to be heavily infested. Two species of ants, not yet identified, were associated with these insects. Many of the plants showed evidence of wilt and could be pulled out of the ground easily. The variety Red Spanish, nearby, was less seriously damaged.

COCONUT

DESTRUCTOR SCALE (Aspidiotus destructor Sign.)

Florida. E. W. Berger and Geo. B. Merrill (March 22): A very abundant build-up of the destructor scale on coconut palms has been observed at Fort Lauderdale, Broward County. Recent observations, however, reveal a high mortality.



T R U C K - C R O P I N S E C T S

VEGETABLE WEEVIL (Listroderes obliquus Klug)

Georgia. F. S. Chamberlin (March 31): Larvae of the vegetable weevil are causing some injury in a large tobacco plant bed at Amsterdam, De-catur County, in southwestern Georgia.

Florida. F. S. Chamberlin (March 25): Larvae have been found in a considerable number of tobacco plant beds in Gadsden County. Infestations were sufficiently heavy in a few beds to necessitate control measures. The insect is also abundant in vegetable gardens.

Mississippi. C. Lyle (March 24): This weevil has attracted considerable attention in the southern part of the State during the last few weeks. F. A. Smith reports that adults were abundant in the western part of Pike County on March 14. The first adults were observed in Harrison and Jackson Counties on March 15 and rather heavy damage, especially to turnips, has been caused. Correspondents in Simpson, Scott, Wil-kinson, Jasper, and Stone Counties have sent specimens of adult weevils to this office during the past week, with the information that they were abundant on and seriously damaging potato plants,

Louisiana. C. O. Eddy (March): Adults were very abundant and destructive early in March.

California. H. J. Ryan (March 25): The larvae did considerable damage in February to cover crops of mustard and malva in a few citrus orchards in southern Los Angeles County.

R. E. Campbell (March 31): Many celery fields in southern Los Angeles County are infested; and the stalks show the characteristic feeding spots. From 1 to 8 larvae per bunch are present. If the infestation can not be reduced within a month much of the celery will be unmarketable.

SPOTTED CUCUMBER BEETLE (Diabrotica duodecimpunctata F.)

Virginia. H. G. Walker and L. D. Anderson (March 25): Twelve-spotted cucumber beetles were observed feeding on a wide variety of host plants at Norfolk on March 22 and 24.

Georgia. T. L. Bissell (March 17): Beetles are abundant on peach blossoms and vetch in central Georgia.

Mississippi. C. Lyle (March 24): On February 21 a correspondent in Bolivar County reported injury to mustard, evidently caused by this insect.

Louisiana. C. E. Smith (March 26): The larvae started destroying young corn at Baton Rouge about March 20 and have been increasing. The activity of this pest is from 3 to 4 weeks earlier than in a normal year, doubtless because of prevailing mild temperatures since January 1.

FLEA BEETLES (*Halticinae*)

Michigan. E. I. McDaniel (March 23): Specimens of the pale-striped flea beetle (*Systema taeniata* Say), working on cabbage in a coldframe at East Lansing were brought in on March 22. This was a good-sized cold-frame and the infestation was heavy.

Colorado. C. R. Jones (March 26): We have received a great number of hibernating flea beetles (*Epitrix* spp.) from Wheatridge and Arvada.

Utah. G. F. Knowlton (March 14): Hop flea beetles (*Psylliodes punctulata* Melsh.) are abundant on roadsides and foot hills near Garland.

CHANGA (*Scapteriscus vicinus* Scudd.)

Florida. J. R. Watson (March 23): About the usual number of complaints are coming in concerning mole crickets, chiefly the West Indian mole cricket.

POTATO

COLORADO POTATO BEETLE (*Leptinotarsa decemlineata* Say)

Mississippi. H. Gladney (March 24): The beetle is somewhat numerous in Jackson and Harrison Counties. The first adults were noticed on March 7.

E. W. Dunnam (March 15): One beetle was found near the surface of garden trash in Leland, in the northwestern part of the State.

Louisiana. B. A. Osterberger (March 20): Adults, eggs, and larvae were noticed on potato plants in a field near Baton Rouge, East Baton Rouge Parish.

CABBAGE

IMPORTED CABBAGE WORM (*Pieris rapae* L.)

Virginia. H. G. Walker and L. D. Anderson (March 25): The butterflies have been ~~moderately abundant in~~ cabbage fields at Norfolk for the week and have been depositing a good many eggs.

Louisiana. C. O. Eddy (March): Adults have been abundant all month. Worms are abundant everywhere.

APHIDS (*Aphididae*)

Virginia. H. G. Walker and L. D. Anderson (March 25): A very small percentage of kale and cabbage plants at Norfolk are heavily infested with the cabbage aphid.

Georgia. O. I. Snapp (March 24): Aphids are rather abundant and are causing considerable damage to 5,000 cabbage plants set out in a field near Fort Valley, central Georgia.

Mississippi. C. Lyle (March 24): A correspondent at Columbia, Marion County, reported serious injury to spinach. L. J. Goodgame reported severe infestations on cabbage near Aberdeen.

#### HARLEQUIN BUG (Murgantia histrionica Hahn)

Virginia. H. G. Walker and L. D. Anderson (March 25): A few bugs were observed feeding on collards on March 23 at Norfolk.

North Carolina. W. A. Thomas (March 19): Thousands of adults suddenly appeared on seeding mustard and cabbage at Chadbourn early in the week ending March 19. By the last of the week most of the seed stalks were dead or dying. They seemed to prefer the seed stalks to the foliage of younger plants growing in the same field.

Oklahoma. C. F. Stiles (March 25): The harlequin cabbage bug is quite numerous throughout the southeastern part of the State.

#### SQUASH

##### SQUASH BUG (Anasa tristis Deg.)

Iowa. H. E. Jaques (March 21): This pest seems to have passed the winter successfully in rather large numbers.

Nebraska. M. H. Swenk (March 21): A Douglas County correspondent reported the squash bug wintering in numbers in the feathery nest material of his martin house.

Kansas. H. R. Bryson (March 29): Squash bugs were reported to be numerous in the vicinity of Manhattan.

#### TURNIP

##### TURNIP APHID (Rhopalosiphum pseudobrassicae Davis)

Louisiana. P. K. Harrison (March 24): This aphid is becoming less abundant at Baton Rouge, owing to the reduction by natural enemies.

#### SPINACH

##### GREEN PEACH APHID (Myzus persicae Sulz.)

Virginia. H. G. Walker and L. D. Anderson (March 25): Spinach aphids are rather abundant in a great many fields of early spinach at Norfolk but are rather scarce in the younger spinach. A fungous disease has killed from 50 to over 75 percent of the aphids in some of the fields.

STRAWBERRY

STRAWBERRY WEEVIL (Anthonomus signatus Say)

North Carolina. W. A. Thomas (March 21): The weevils from hibernation began entering the strawberry fields on March 15 and by March 21 had spread over most of the fields of older berries in the Chadbourne area. The sudden advent of spring has resulted in a mass emergence of the weevils from hibernation, causing a sudden infestation to develop much earlier than usual.

SUGAR BEETS

SUGAR-BEET WIREWORM (Limonius californicus Mann.)

California. M. W. Stone (March 23): Considerable damage to sugar beets in Orange County occurred in March. Because of the thinned-out fields, two beet growers replanted over half of their total acreage. Counts made on March 18 showed an average of 1 larva per foot of row and as high as 13 larvae attacking a single plant.

BEET LEAFHOPPER (Eutettix tenellus Bak.)

Texas. F. L. Thomas (March 21): On January 19 this insect was found on spinach and sugar beet at Iowa Park, Wichita County, on January 3 at Weslaco and on February 9 at Elsa, Hidalgo County, on spinach.

Utah. G. F. Knowlton (March 14): Adults are moderately abundant on the filaree foothills southwest of Garland, in Box Elder County.

TOBACCO

TOBACCO FLEA BEETLE (Epitrix parvula F.)

Virginia. W. J. Shoene (March 21): Beetles have emerged in small numbers at Chatham on March 19.

South Carolina. N. Allen (March 19): Injury to plants in beds has been very light. This conforms to the results of emergence in hibernation cages which began early in February. The present season has been abnormally dry and it appears that this may have affected emergence from hibernation.

Tennessee. L. B. Scott (March 25): At Clarksville many plant beds were found to be infested on March 19. The beetles appeared 2 weeks earlier than last year and in much greater numbers. Some beds in which seed had not germinated were found to be infested, indicating that the plants will be damaged as soon as they appear above ground.



GREEN JUNE BEETLE (Cotinis nitida L.)

South Carolina. N. Allen (March 19): In making a survey of tobacco beds in portions of Marion, Horry, Florence, and Williamsburg Counties, it was found that larvae had injured some beds on 10 of the 21 farms visited. In some instances, nearly half of an infested bed was injured. Injury was found only on those bed sites that had been used for more than a year.

TOBACCO BUDWORM (Heliothis virescens F.)

Florida. F. S. Chamberlin (March 31): Larvae are very abundant on newly set tobacco plants in Gadsden County.

C O T T O N I N S E C T S

BOLL WEEVIL (Anthonomus grandis Boh.)

Georgia. T. L. Bissell (March 26): One boll weevil was jarred from peach at Pomona, in central Georgia.

BOLLWORM (Heliothis obsoleta F.)

Texas. K. P. Ewing and R. L. McGarr (March): Two bollworm moths were collected on corn in the vicinity of Robston on March 11, and five moths were collected in a field of alfalfa and clover at Wharton on March 15. Although no bollworm eggs were found, they were probably being laid on corn in these localities.

PINK BOLLWORM (Pectinophora gossypiella Saund.)

Texas. A. J. Chapman (March): Several pink bollworm pupae were found in February in cotton bolls left on the surface of the ground at Presidio. Moths began emerging during the first half of March, which is unusually early for this locality.

COTTON FLEA HOPPER (Psallus seriatus Reut.)

Texas. F. L. Thomas (March 21): The first flea hopper nymphs have been found as far north as Falls County, in central Texas. No adults have been taken on screen traps in Brazos County.

Texas. K. P. Ewing and R. L. McGarr (March): Nymphs hatched from overwintering flea hopper eggs in hibernation cages at Port Lavaca on February 12. On the same date first- and second-instar nymphs were collected on croton in Calhoun County. Adults were collected on croton during the week of March 5. This is the earliest we have ever found adults in eastern Texas.

J. C. Gaines (March): Three adults and several nymphs were collected on flight screens at College Station on March 25. These are the first adults collected this year at this point.

Correction.---The beet armyworm (Laphygma exigua Hbn.) was erroneously given as L. frugiperda S. and A.; in the Insect Pest Survey Bulletin for July 1, 1937 (vol. 17, no. 5, p. 257).

F O R E S T A N D S H A D E - T R E E I N S E C T S

CANKERWORMS (Geometridae)

New Jersey. M. D. Leonard (March 27): Many trees examined on March 20 at Ridgewood showed only four or five males and no females of the spring cankerworm (Paleacrita vernata Peck). The weather was very mild and on March 19 from six to eight males appeared at the window. On March 27 no adults could be found, the weather being cooler (about 50° F.).

Pennsylvania. H. E. Hodgkiss (March 24): Moths of the spring cankerworm were flying at State College on March 17.

Ohio. T. H. Parks (March): Male moths of the spring cankerworm were seen flying among elm trees, and wingless females were present on elm twigs on March 20. The males have been flying for the last 3 weeks. A heavy outbreak is anticipated.

Illinois. W. P. Flint (March 22): Adults of the cankerworm continue to be abundant in the western part of the State. For more than a month males have been observed on the wing.

Iowa. C. J. Drake (March 25): Males of the spring cankerworm are being attracted to lights in tremendous numbers throughout most of the State.

H. E. Jaques (March 21): Spring cankerworm adults are showing extraordinary abundance this spring. Reports are coming in of several hundred females being caught in the bands of one tree and numerous complaints are made of the annoyance caused at night by large numbers of male moths entering dwellings and stores.

Missouri. L. Haseman (March 24): At Columbia during the last week I have seen more male spring cankerworm moths than I have ever seen in any similar length of time in the 30 years I have been connected with the Department. Apparently we are to have a real tussle with spring cankerworms in central Missouri this year.

Nebraska. M. H. Swenk (March 21): In the southeastern part of the State considerable activity of moths of the spring cankerworm was noted during the period from March 10 to 20.

Kansas. H. R. Bryson (March 29): Cankerworms were noticeably absent on banded trees over the usual area in eastern Kansas. Heavy flights at Manhattan occurred on March 15 and 17.

Oklahoma. R. G. Dahms (March 26): The spring cankerworm is completely stripping the foliage of apple trees in many small orchards that have not been sprayed. (Reported from the State field station at Lawton, Comanche County, in southwestern Oklahoma.)

FALL WEBWORM (Hyphantria cunea Drury)

Louisiana. C. O. Eddy (March): The first adults were seen at Baton Rouge on March 20.

FIR

A TORTRICID (Epinotia meritana Heinr.)

Utah. D. De Leon (March 25): The outbreak first observed last year in Powell National Forest has caused serious defoliation to white fir (Abies concolor) and appears to be as heavy, if not heavier, than in 1937.

LARCH

LARCH CASEBEARER (Coleophora laricella Hbn.)

New York. R. E. Horsey (March 19): A number of live larvae in their overwinter cases were found on Larix americana at Rochester. The larch was still dormant and the larvae had not begun to feed.

OAK

GOUTY OAK GALL (Andricus punctatus Bass.)

New York. E. P. Felt (March 24): This gall insect was extremely abundant on oak at Pelham Manor in March. A number of the galls had been partly eaten away by squirrels in their desire to get the grubs.

PINE

WHITE-PINE WEEVIL (Pissodes strobi Peck)

New York. E. P. Felt (March 24): The unseasonably warm weather of March 21-23 has brought out the adults.

WALNUT SCALE (Aspidiotus juglans-regiae Comst.)

Pennsylvania. E. P. Felt (March 24): This scale was reported as abundant on Scotch pine in the Philadelphia area during March.

PINE NEEDLE SCALE (Chionaspis pinifoliae Fitch)

Colorado. C. R. Jones (March 26): Numerous requests have come to this office for the control of the pine leaf scale.

Utah. G. F. Knowlton (March 21): Austrian pine on the Utah State Agricultural College campus at Logan has been heavily infested.

POPLAR

CALIFORNIA TENT CATERPILLAR (Malacosoma californica Pack.)

Arizona. C. D. Lebert (March 25): A few colonies were observed on cottonwood trees in the northeastern Phoenix area.

WILLOW

CARPENTER WORM (Prionoxystus robiniae Peck)

North Dakota. J. A. Munro (March 21): These pests caused severe injury to a planting of willows at Mott, in Hettinger County. They were also reported on American elm at Park River, Walsh County.

I N S E C T S   A F F E C T I N G   G R E E N H O U S E  
A N D   O R N A M E N T A L   P L A N T S

CABBAGE LOOPER (Autographa brassicae Riley)

Louisiana. C. E. Smith (March 26): Snapdragons and calendulas growing under glass at Baton Rouge were severely injured during February and March.

A WHITEFLY (Aleyrodidae)

Virginia. H. G. Walker and L. D. Anderson (March 25): Whiteflies are reported as very abundant on gardenias in Norfolk.

OYSTERSHELL SCALE (Lepidosaphes ulmi L.)

New York. R. E. Horsey (March 21): A small amount of this scale was discovered on two vines of Vitis longi in an ornamental planting in Rochester. An examination under the microscope showed that the eggs came through the winter uninjured.

COTTONY-CUSHION SCALE (Icerya purchasi Mask.)

Arizona. C. D. Lebert (March 25): On March 15 severe infestations were reported on ornamentals at Patagonia, Nogales, and Phoenix. Scattered light infestations on citrus appeared in the Phoenix area.



ARBORVITAE

ARBORVITAE APHID (Lachnus thujaefilina Del G.)

Oklahoma. R. G. Dahms (March 26): This aphid is very abundant on arborvitae. (Reported from the State field station at Lawton, Comanche County, in southwestern Oklahoma.)

AZALEA

AZALEA SCALE (Eriococcus azaleae Comst.)

Mississippi. C. Lyle (March 24): Azalea leaves infested with this pest were received from Clark County on February 24. H. Gladney reports that two azalea plants were found infested in Harrison County a short time ago.

CATALPA

COMSTOCK'S MEALYBUG (Pseudococcus comstocki Kuw.)

Michigan. E. I. McDaniel (March 23): Specimens of the catalpa mealybug were received on March 23. In the past this species has not been common with us.

CHRYSANTHEMUM

CHRYSANTHEMUM APHID (Macrosiphoniella sanborni Gill.)

Arizona. C. D. Lebert (March 25): The chrysanthemum aphid was observed on March 20 on several plantings in the Phoenix area, and was very numerous on 2 or 3 inches of terminal growth. The plants were completely infested with aphids in several plantings.

EUONYMUS

EUONYMUS SCALE (Chionaspis euonymi Comst.)

Mississippi. C. Lyle (March 24): J. Milton reports that this insect is very abundant on and has caused serious damage to many euonymus plants in the vicinity of Jackson. Specimens on euonymus were received from Booneville, in Prentiss County, on March 8.

HOLLY

HOLLY LEAF MINER (Phytomyza ilicicola Loew)

Virginia. C. R. Wiley (March 21): This pest is apparently more abundant in the Richmond area than usual. A number of requests have been received for control remedies. We have seen a number of individual

trees and at least one hedge heavily infested. Pupation must have begun about March 1, as all of the 20 or 30 individuals examined on March 14 had pupated. Leaves are falling, but whether this is caused by the miner or is the natural shedding, I am not sure.

CEDAR

JUNIPER WEBWORM (Dichomeris marginellus F.)

Delaware. L. A. Stearns (March 23): Infestation is reported on cedar at Seaford.

OLEANDER

OLEANDER CATERPILLAR (Syntomeida epilais Walk.)

Florida. J. R. Watson (March 23): The oleander caterpillar is working in all sections from Gainesville south.

ROSE

ROSE APHID (Macrosiphum rosae L.)

Virginia. C. R. Wiley (March 21): This aphid has been present on roses in Richmond for 2 months; recent warm weather has apparently stimulated reproduction and now the young rose shoots are very heavily infested. I noticed a species of syrphid fly hovering over my rose bushes when I sprayed them March 19. A Danville, Va., nurseryman was in the office on March 21 and he was impressed with the abundance of aphids on roses and Japanese barberry in Richmond. He stated that they were unusually scarce in Danville at that time.

Louisiana. B. A. Osterberger (March 16): A green aphid has so seriously infested rose bushes that many of the roses are not opening normally.

I N S E C T S A T T A C K I N G M A N A N D  
D O M E S T I C A N I M A L S

MAN

MOSQUITOES (Culicinae)

Florida. B. V. Travis (March 2): The mosquitoes (Anopheles quadrimaculatus Say) that have been so abundant around the house all winter in Tallahassee, are now seen only rarely. (March 17): Still present but few in number. A. crucians Wied. has been rather numerous around the outside of the house for the last 2 weeks.

Mississippi. E. W. Dunnam (March 23): Mosquitoes have been noticed attacking people about dusk in the vicinity of Leland. Some have been observed feeding on the legs of cattle before this time of day.

Missouri. L. Haseman (March 24): Within the last 10 days mosquitoes have begun to show up. One unusually large, undetermined species has been especially noticeable in bedrooms in central Missouri.

EYE GNATS (Hippelates spp.)

Georgia. A. L. Brody (March 25): There has been an increase in abundance during the past months. Eye gnats became slightly annoying to humans on March 15 and were noted as very active and abundant on March 18.

DEER FLIES (Chrysops spp.)

Georgia. J. B. Hull (March 26): These flies began to appear in Savannah the middle of March, in small numbers in and around marshes.

SANDEFLIES (Culicoides sp.)

Georgia. J. B. Hull (March 26): The annual spring emergence has been greater in the vicinity of Savannah this year than in any of the last 5 years.

CHIGGER (Trombicula irritans Riley)

Florida. B. V. Travis (March 29): We noticed a few attached to us on March 20.

TROPICAL RAT MITE (Liponyssus bacoti Hirst)

Oregon. D. C. Mote (March 3): Specimens of mites were sent from North Bend, where they were emerging from a very narrow crack in the wall.

California. R. H. Smith (January 20): This mite presumably has been the cause of considerable discomfort to persons in Los Angeles.

AMERICAN DOG TICK (Dermacentor variabilis Say)

Massachusetts. C. N. Smith (March 25): The first adults were taken this season on March 21 on Marthas Vineyard Island. One male was found on my clothing while I was looking for ticks. Five males and five females were taken from a dog before they had become attached and several specimens were taken from another dog. Each of the three lots was taken by a different collector in different localities, all on March 21. The temperature reached 68° F. at this time, the first day since fall that it has been over 60°. No larvae or nymphs have been collected this spring.

CATTLE

SCREWORM (Cochliomyia americana C. & P.)

Georgia. A. L. Brody (March 29): An infested hog near Quitman was reported on January 21. A farmer also reported another case in his locality about the middle of February.

Texas. D. C. Parman (March 25): Screwworm flies (C. americana) were practically exterminated during the summer of 1937 in the southern areas in Texas where traps have been operated, at Catarina, Laredo, Hebbronville, Alice, and Three Rivers. In no catch since August 1937 have there been more than one or two flies in any of these traps, none has been taken since December, and only one in December. The trappings have indicated that weather conditions have been very favorable for build-up of C. macellaria. There were 15 quarts of flies taken at Laredo in January, practically 87 percent of which was this species. In February the traps at Laredo, Hebbronville, and Alice took 21, 26, and 19 quarts of flies, respectively, and approximately 90 percent of these were C. macellaria.

Arizona. C. C. Deonier (March 25): Screwworms were taken at Bumble Bee and Wichenburg during the latter half of January and at Hassayampa during the first part of February. They were also taken at Nogales and Tempe during the latter half of February. A considerable outbreak of these pests was indicated by examination in the Yuma area on February 17, infestations being as high there as 20 to 30 percent. A few cases of screwworms have been reported throughout the area worked during the winter.

STABLEFLY (Stomoxys calcitrans L.)

Georgia. A. L. Brody (March 25): These flies were first noted at Valdosta during the first week in February, when from 10 to 15 adults per animal were seen. The flies were usually found on the lower



half of the legs. This species increased to 25 per animal the middle of February and in March from 25 to 50 per animal. The steers at the farm have been considerably annoyed by stableflies during the last month. Often it was difficult to drive them from the tall gallberry bushes among which they stood for the slight protection against the flies.

Mississippi. E. W. Dunnam (March 15): The stablefly has been breeding off and on all the winter.

#### CATTLE GRUBS (Hypoderma spp.)

Georgia. A. L. Brody (March 25): Larvae of the cattle grub (Hypoderma probably lineata DeVill.) were still appearing in the backs of steers during the latter part of February. The last recorded removal was made on February 24. The greatest appearance of warbles has been noted from the second week in November 1937 to the second week in January 1938.

Iowa. R. W. Wells (March 29): Cattle grubs (H. lineatum and H. bovis Deg.) are more abundant this year than during the preceding 3 years, as judged by examinations made of cattle in the counties of Story, Boone, Warren, and Clayton. In Warren County all of the 30 larvae of H. lineatum taken from 3 head of cattle were in the third or final instar. Apparently no grubs had dropped from these cattle on March 22, when the examinations were made. In Clayton County on March 23, 291 grubs were taken from cattle and 52 percent of them were in the second instar. The presence of a few grubs in the first instar indicated that not all of the larvae had reached the backs.

Missouri. L. Haseman (March 24): Recent investigations on ox warble control have revealed the fact that throughout central and north-central Missouri generally our common warble has been maturing ahead of schedule. Practically all of the warbles, where the animals were not treated, have already escaped from the backs of cattle. A few specimens, not over half-grown, taken during the past week, seem to be individuals of the northern later maturing species.

#### HORN FLY (Haematobia irritans L.)

Georgia. A. L. Brody (March 25): Horn flies were first observed to be active on February 8, at which time less than 10 flies per animal were noted. The number per animal increased to 50 flies during the middle of February, and to 150 by the middle of March. It was interesting to note that on all occasions when observations were made more flies were seen on dark- than on light-colored animals.

GREENBOTTLE FLIES (Lucilia spp.)

Georgia. A. L. Brody (March 29): Five infestations of larvae of Lucilia spp. were found in artificially wounded animals at the experimental farm near Valdosta. The county agent in Lowndes County reported infestations of maggots in a hog at Hahira the middle of March and in another near Valdosta.

CATTLE BITING-LOUSE (Bovicola bovis L.)

North Dakota. J. A. Munro (March 21): Biting lice of cattle have been rather commonly reported from herds in various parts of the State.

Iowa. R. W. Wells (March 29): Cattle in the central part of Iowa were exceptionally free from cattle lice during the past winter, as judged from the results of visits to about 50 farms. Only a few light infestations were found, even on farms that had heavier infestations during the previous year.

LONG-NOSED CATTLE LOUSE (Linognathus vituli L.)

Iowa. R. W. Wells (March 29): Cattle in the central part of the State were exceptionally free from lice but, of the bloodsucking lice found, L. vituli was the most common.

GULF COAST TICK (Amblyomma maculatum Koch)

Georgia. A. L. Brody (March 25): A few nymphs were found on meadow larks caught in a field. Four males of this species remained attached to sheep throughout the winter until March 10. A week later only one of these males was still attached.

HORSE

BUFFALO GNATS (Eusimulium spp.)

Mississippi. C. Lyle (March 24): F. A. Smith states that buffalo gnats were observed in the western part of Tate County about January 20, and W. L. Douglass reports that a few of these gnats were observed last week in the western part of Grenada County.

C. C. Smith (March 12): Buffalo gnats (E. neannum Riley) are beginning to give considerable trouble along the Tallahatchie, Coldwater, and Yalobusha Rivers in Jefferson, Grenada, Tallahatchie, Quitman, and Tunica Counties. The situation is not as serious as it was in 1933, but many people are beginning to use smudges and gnat oil.

HORSE BITING-LOUSE (Trichodectes equi L.)

North Dakota. J. A. Munro (March 21): Reports of biting lice of horses have come from Max, in McLean County, and Clement and Fullerton, in Dickey County, during the last month.

SHEEP

SHEEP BOTFLY (Oestrus ovis L.)

Georgia. A. L. Brody (March 25): On February 15 one full-grown larva of the sheep nose bot dropped naturally from the nose of a sheep. On March 17 a live adult was found resting on a screened cage at the Experimental Farm at Valdosta.

Utah. G. F. Knowlton (March 26): Inquiries concerning grubs in the heads of sheep were received from various parts of Utah, together with reports of injury.

A GOAT LOUSE (Linognathus sp.)

Georgia. A. L. Brody (March 19): Young goats at the Experimental Farm at Valdosta are heavily infested with blue lice. Collections were made from infested animals on February 14.

BLACK-LEGGED TICK (Ixodes ricinus scapularis Say)

Georgia. A. L. Brody (March 25): A few adults were still attached to sheep.

HOGS

HOG LOUSE (Haematopinus suis L.)

Tennessee. G. M. Bentley (March 15): This louse has been reported on hogs at several points in the State.

H O U S E H O L D   A N D   S T O R E D - P R O D U C T S   I N S E C T S

TERMITES (Reticulitermes spp.)

Connecticut. N. Turner (March 24): Flights of R. flavipes Koll. began indoors in January and occurred outside during the last week. The usual large number of infested buildings was reported.

Pennsylvania. E. J. Udine (March 23): At Carlisle winged forms of termites are emerging from the outside window sills and frames in an old stone house and some damage has been done to the wooden foundation sills in the basement. As the tunnels are in the mud plaster, the situation is hard to control.

- Ohio. T. H. Parks (March): More than the usual number of reports of termites swarming have reached us during the extremely warm periods of the last week.
- Indiana. E. V. Walter (March 21): Termites were issuing from holes in the side of a building at La Fayette on March 21, when the temperature was about 69° F.
- Illinois. W. P. Flint (March 22): Since the middle of March these insects have been swarming over the southern half of the State, and many swarms have been appearing in heated buildings in central Illinois.
- Tennessee. G. M. Bentley (March 21): Several swarms of termites (R. flavipes) have been reported in Knox and Bradley Counties in the neighborhood of Knoxville and Cleveland. It is evident that in other counties similar swarms are taking place. The termite situation in Tennessee is getting worse each year.
- L. B. Scott (March 25): Termites appear to be more troublesome than usual. Many inquiries were received during March from people who noticed swarms of termites in and near their homes at Clarksville. Damage appears to be slight.
- Missouri. L. Haseman (March 24): Since about the middle of the month half a dozen swarms of termites at Columbia have been reported. Most of these have emerged in basements or inside the house but one or two have been reported as emerging outside.
- Nebraska. M. H. Swenk (March 21): Termites (R. tibialis Banks) were reported as damaging a house in Buffalo County and destroying a wind-break of Austrian pine and Chinese elm trees in Cass County on March 3 and 18, respectively.
- Texas. F. L. Thomas (March 21): Termites were found at Temple, Bell County, on February 18.
- Utah. G. F. Knowlton (March 21): Winged termites have been observed flying on warm days recently.

#### ANTS (Formicidae)

- Connecticut. N. Turner (March 24): The pavement ant (Tetramorium caespitum L.) is increasing in abundance in houses. It is commonly found nesting under concrete basement floors or outside of foundations.
- Florida. B. V. Travis (March 2): The activity of the fire ant (Solenopsis geminata F.) is only slight in Tallahassee, owing to prevailing low temperatures.



Mississippi. C. Lyle (March 24): J. Milton reported on February 25 that Camponotus caryae rasilis Wheeler was infesting a house in Jackson. This species was also reported from Yazoo City on March 19. Many complaints have been received from various localities throughout the State about fire ants (S. xyloni McCook) in gardens and other places.

BOXELDER BUG (Leptocoris trivittatus Say)

Iowa. H. E. Jaques (March 21): This bug has been the cause of many serious complaints because of its annoyance in houses.

Nebraska. M. H. Swenk (March 21): Boxelder plant bugs were reported as abundant and troublesome in March in and around houses in the Missouri River counties from Douglas to Thurston.

Kansas. J. R. Horton (March 28): At Wichita this insect has passed the winter successfully in large numbers on the sides of houses, tree trunks, and other places.

H. R. Bryson (March 29): After 5 or more years of comparative scarcity, boxelder bugs are more abundant than usual. Large clumps were observed on the southern exposure of a bluff on February 22. Reports of annoyance have come from Manhattan and a few other localities.

Nevada. Geo. G. Schweis (March 22): We have had a number of calls recently about the presence of boxelder bugs in such numbers as to become annoying to some of our residents.

Utah. G. F. Knowlton (March 18): Boxelder bugs have survived the winter in large numbers at Logan, and are annoying people in homes, school-houses, and offices.

CLUSTER FLY (Pollenia rudis F.)

Indiana. P. Luginbill (March 16): The cluster fly has been reported near La Fayette as very abundant in a dwelling, and causing great annoyance.

AN ANOBIID (Xestobium rufovillosum Deg.)

Connecticut. N. Turner (March 24): There have been more reports than usual of these beetles attacking timbers in buildings.

A SPIDER BEETLE (Ptinus tectus Boieldieu)

Oregon. M. H. Hatch and B. G. Thompson (January): At Portland this pest was found attacking dried fish and in great numbers on the buds of trees.

ORIENTAL COCKROACH (Blatta orientalis L.)

Michigan. E. I. McDaniel (March 23): A bakery heavily infested with the oriental roach was treated. We have a few local infestations in Lansing, but this roach is not general with us.

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CLOVER MITE (Bryobia praetiosa Koch)

Colorado. R. G. Richmond (March 23): During the last month almost daily calls have come in regarding the control of this pest. The mite is invading houses in large numbers and is a real household nuisance in food, dishes, and bedding in the Denver area.